Shinco®

Applicable to

KFR-25GWZ/BM
KFR-35GWZ/BM
KFR-50GWZ/BM
KFR-70GWZ/BM

Split Type Wall-mounted Inverter Room Air Conditioner

Instruction Manual

Thank you for purchasing a Shinco air conditioner.To guarantee safety and best efficiency, please read this manual carefully and keep it for future reference.

To Consumers

1. This air conditioning unit should be installed and repaired by a qualified technician.
2. The air conditioning unit must be grounded reliably during the installation.
3. Please clean the air filter nets 1 to 2 times per month when the air conditioner is being used frequently (details inside).

Features:

With the compressor and the micro computer controlling chip, the performance is stable and reliable.

The high-efficiency compressor and heat exchanger guarantee higher efficiency and energy-saving.

Quiet running.

Note:

Some information included in this manual might be different on the unit if parts are modified by the manufacturer.

SAFETY PRECAUTIONS

Please read the SAFETY AND OPERATING INSTRUCTIONS carefully before operating the unit.

Please respect the following safety precautions when using your air conditioner to preventfire, shock hazard or personal injury.

⚠ **WARNING**	This sign warns of risk of death or serious injury.
⚠ **CAUTION**	This sign warns of injury or damage to property.

This symbol denotes an action that is PROHIBITED.

This symbol denotes an action that is COMPULSORY.

INSTALLATION PRECAUTIONS

⚠ **WARNING**	• Do not install, remove or re-install, the unit yourself. Improper installation may cause leakage, electric shock or fire. The unit should be installed by a qualified technician.
⚠ **CAUTION**	⏚ • Please use ground. Improper grounding could cause elec tric shock. Do not place the ground line near water or gas pipes, elec tric or telephone lines. Improper installation could cause an electric shock.
	• Do not install the unit in a place where there could be a gas leak. The unit may catch fire if flammable gas leaks around it.
	• Please ensure smooth flow of water when installing the drain hose. • The indoor unit must be installed at least 2.4 meters high from the floor. • If the fuse on PCB board is blown, please have it changed by aqualified technician.

OPERATION PRECAUTIONS

⚠ **WARNING**	• Do not operate with wet hands. • Avoid staying directly in front of operating unit. • Do not insert foreign objects into the unit. • Always have the unit repaired by a professional technician - contact a service center. • Danger of electric shock or fire if used improperly. • Do not use if the power cord is damaged, it could cause an electric shock or fire. • Do not allow children to operate the air conditioner. • Never sit on the unit.
	• If you notice an abnormality (burnt smell, etc) please shut the power off and unplug the unit.
⚠ **CAUTION**	• The unit should not be used for any other purpose. • Avoid spilling liquids on the unit. • Do not place the air conditioner close to a heat source, it could cause a deformation or color fading. • Do not block the air intake and outlet vents. • Do not let the air conditioner function at maximum power for an extended period of time (close all doors and windows). • Do not operate without the air filter installed or when the front intake grill has been removed. • Do not place anything on the unit. • Always turn the power off before cleaning the air condi tionerto avoid any possible accidents.
	• Please ensure proper ventilation when using the air conditioner.

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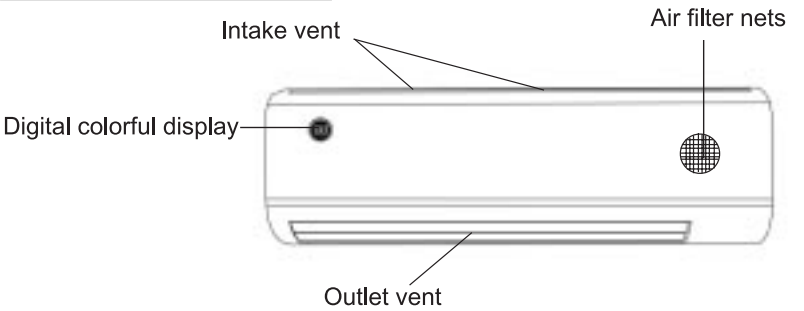
Part Ⅰ Operation Instruction

1.Parts Names and Functions

1-1 Indoor Unit



Digital colorful display

Running lamp (green) on:The unit is operatonal
out:The unit is not running

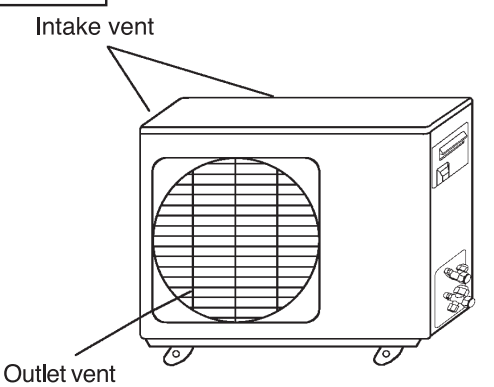
Timer lamp (yellow) on:Indicate the air conditioner is timed to on or off.

Protection lamp (red) flash:Indicate the air conditioner is abnomal,please notify the servicenan.

Set temper ature/Time display: 88

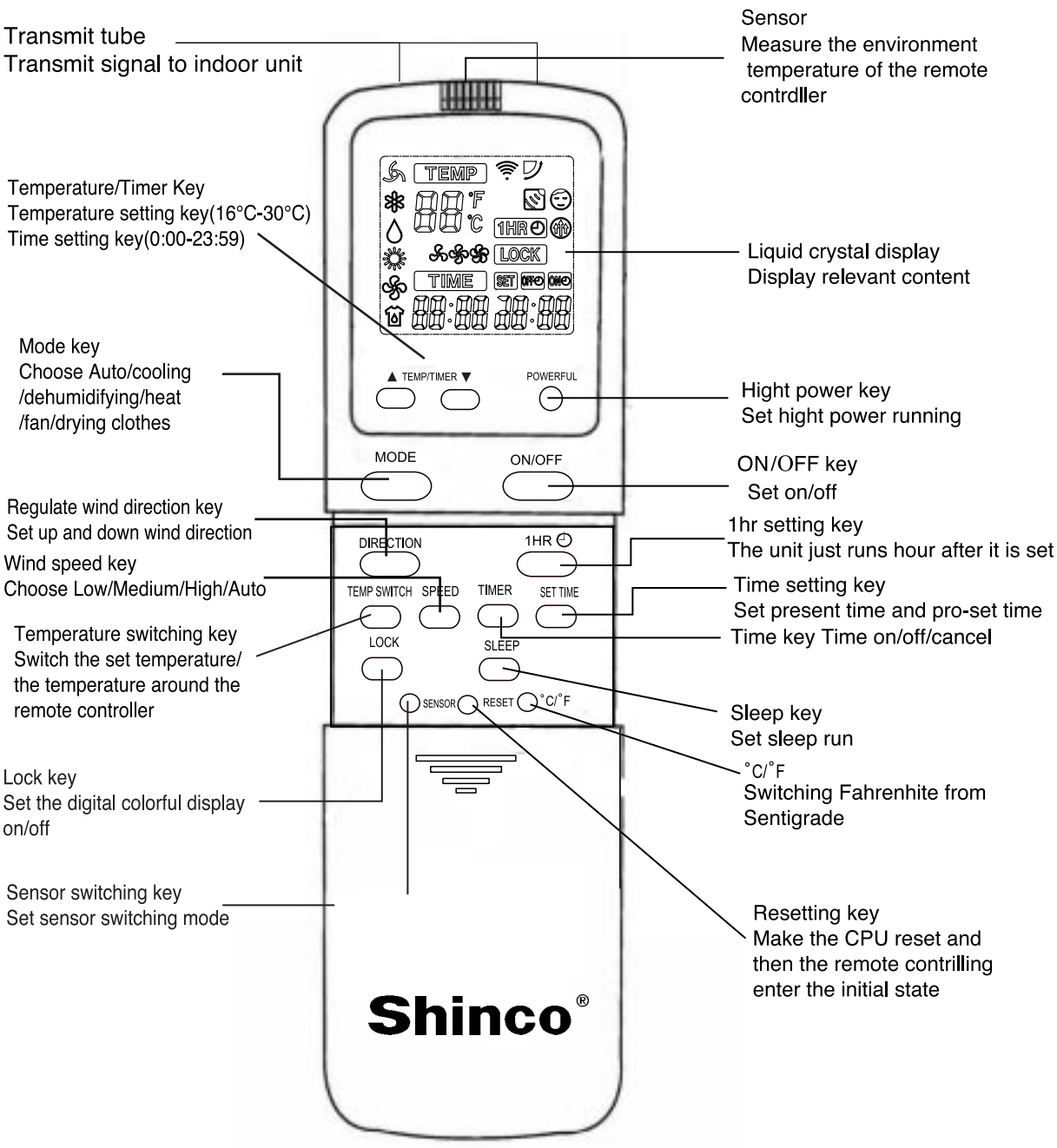
Note:Press "LOCK"button once,then the digital colorful display is off.Press it again,then the digital colorful display is on again.

1-2 Outdoor Unit



NOTE:The diagram above is of a standard exterior unit and may differ from your unit.

1-3 Remote control



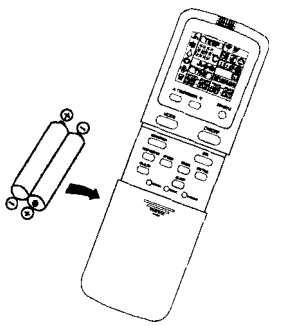
Directions:

1. Mode display: (Auto) (Cooling) (Dehumidifying) (Heating) (Fan) (Dry clothing)
2. Temperature setting display: TEMP
3. The temperature around the remote controller display:
4. Wind speed display : (Low) (Medium) (High) (Auto)
5. Present time display: TIME
6. Signal transmitting display:
7. Wind direction display: (Wind direction adjustment)
8. Sensor switching display:
9. Sleep timer display:
10. One hour setting display: 1 HR
11. High power display:
12. Lock display: LOCK
13. Timer setting display: SET

2. Batteries

Avoid direct sunshine and other heat resources. If the remote control does not function properly, please press the restart button or change the batteries.
Remove the front cover of the remote control. Please use two new AAA size 1.5V batteries of the same brand. Be sure to observe polarity. The batteries should be taken out of the unit if it is not used for a long period of time. Never mix new and used batteries.

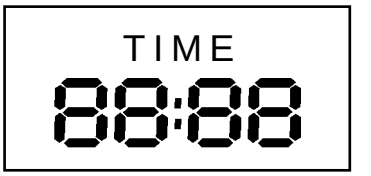
Two AAA Size 1.5v batteries



Remove front cover
(Change the batteries)

3-1 Setting the clock

Press “SET TIMER”, the minutes indicator will be flashing, then use the arrows to set the minutes (0~59 minutes) press “SET TIMER” again. Do the same thing to set the hour (0~23 hours).



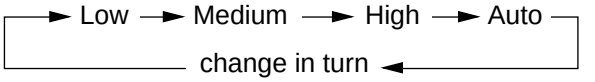
Attention:

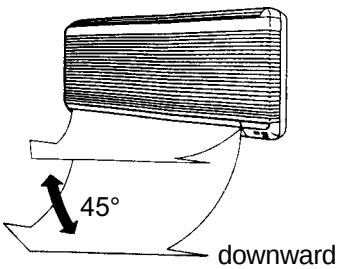
The clock can be set even if the unit is closed.

3-2 Wind Speed-Wind Direction Adjustment

For your comfort, adjust the wind speed and direction correctly.

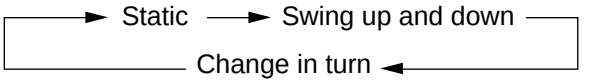
To adjust the wind speed, press on SPEED (see below):

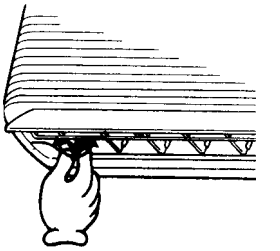




To adjust the wind direction press DIRECTION (see below)

Regulate the horizontal wind direction:



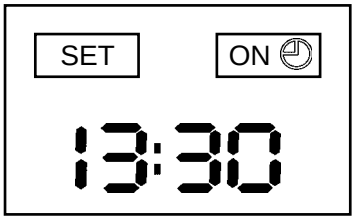


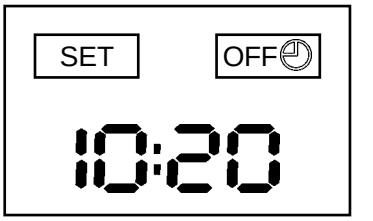
3-3 Timer setting

To set the starting time press the TIMER button, when ON displays in the time section on the LCD screen, use the arrows to enter the desired starting time and then press SET TIME again. The unit will start automatically at the time you have set.

To set the stop time press the TIMER button, when OFF displays in the time section on LCD screen, use the arrows to enter the desired stopping time and then press SET TIME again.

The unit will stop automatically at the time you have set.





To cancel time setting press the TIMER button. Nothing will be displayed on the LCD screen.

One hour setting Press the 1HR button, the one hour setting function is on (the unit stops after running for 1 hour). To cancel press the 1HR button again.

Note: the values used to display time are from 00:00 to 23:59.

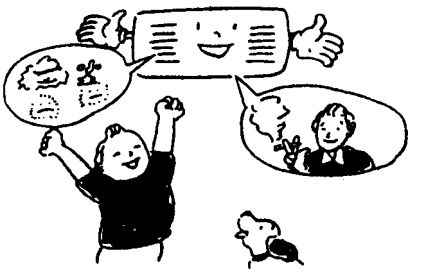
3-4 Cooling•Heating•Dehumidy mode

Press ON/OFF button.
Press MODE button, and choose “Cooling”, “Heating” or “Dehumidify” mode.
Press the arrows to regulate temperatures between 16 and 30 degrees Celsius.
Press the arrows button once, the temperature changes 1 degree at a time.
Press the SPEED button to adjust the air flow.
Press the DIRECTION button to adjust the wind direction.
Press ON/OFF to close the air conditioner.

Attention: If the unit is closed the LCD screen shows the room temperature. The green light indicates the unit is in cooling or heating mode. The green light will be flashing when the outside temperature is very cold.

During heating mode, if the exterior temperature is very cold, it is possible that the air flow could be less powerful and the unit could make some noise and the internal ventilator could stop. It is also possible that the exterior unit could stop or that some vapour could evaporate from it, etc. This phenomenon is normal when exterior temperature is very cold.

3-5 Ventilator mode



Press ON/OFF.
Press MODE, choose the ventilator mode.
Press SPEED, choose the desired speed.
Press ON/OFF to stop the unit.

3-6 Drying clothes mode

Press the ON/OFF button then press MODE button and choose “Drying Clothes” mode.
Press the ON/OFF button to close the air conditioner.

Attention:

1. Select the cooling, heating or dehumidify mode according to the room temperature.
2. If the quantity of clothes to dry is too large or the dehumidify mode is not activated, then the drying will not be completed.

3-7 Auto running

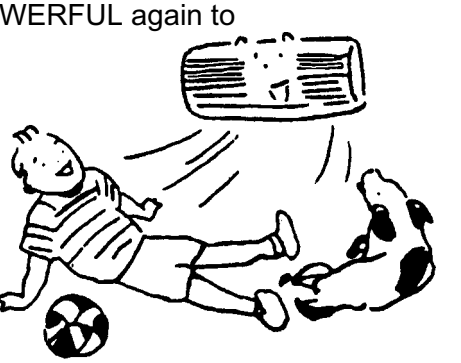
Choose temperature, wind speed and direction automatically.
Press ON/OFF button then press MODE button and choose “Auto“ setting.
Press TEMP to select the desired temperature and adjust the wind flow and wind direction.

To close press the ON /OFF button.

3-8 Powerful mode

Press “POWERFUL” in heating or cooling mode and the symbol will appear on the LCD screen. Press POWERFUL again to cancel.

Attention: After operating at maximal power for 15 minutes the unit will automatically stop and then restartat the preset temperature.
The symbol will disappear on the LCD screen.
The unit will make more noise at maximal power.



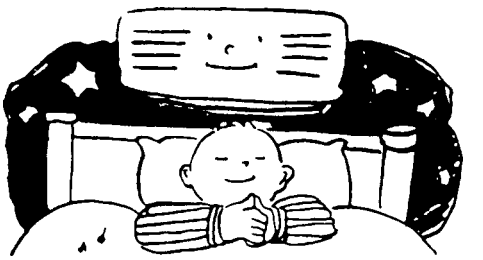
3-9 Sleeping mode

Use the SLEEP mode to stay comfortable thru the night, the symbol will appear on the LCD screen. To cancel, press SLEEP again.

In cooling mode: one hour after activating the SLEEP mode the preset temperature increases by one degree automatically, and two hours after the preset temperature increases by one degree automatically again.

In heating mode: one hour after activating the SLEEP mode the preset temperature increases by 2 degrees automatically, and two hours after the preset temperature increases by another 2 degrees automatically again. This function will assure your comfort thru the night.

Press SLEEP button again to cancel the sleep function.



3-10 Switching from C° to F⁰

Press ⁰C / ⁰F button to switch the display from Celsius to Fahrenheit.

3-11 Sensor Switching mode

Use this function when the room temperature is uneven. The temperature around the remote control can be transmitted to the unit to adjust the temperature.

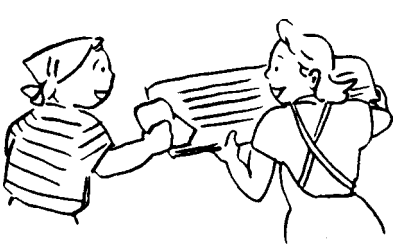
Press SENSOR when the unit is in use in heating or cooling mode and this symbol will show on the LCD screen.

Press SENSOR again to cancel.

4. Maintenance

Attention: Always unplug unit before cleaning. Clean the filters every two weeks.

Cleaning of the remote control	Clean the intake vent grill
Clean with a damp cloth	Clean with a damp cloth and dry. If necessary use a gentle soap.

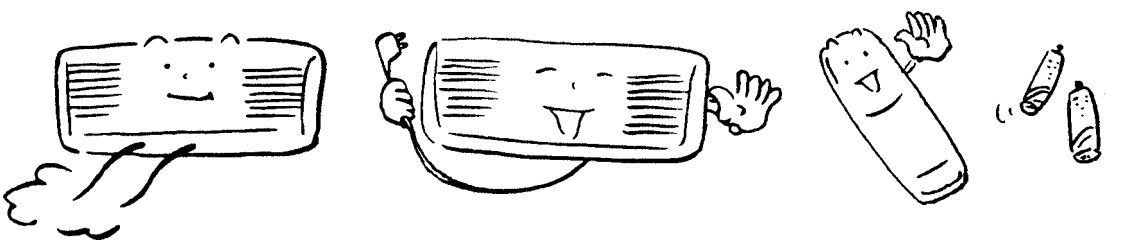


Clean the air filter (once every two weeks)

1. Hold the two ends of the grill and gently push the filters downward	**2.** Use vacuum cleaner or water to clean the filters and then dry.	**3**. To put the filters back into place hold the two ends of the grill and insert the filters.

When the machine will not be used for a long period of time

•Run to dry the inside of the machine •Pull out the power plug •Take the batteries out of the remote control.



5. Efficiency guide

Try to keep windows and doors closed. Avoid direct sunlight to indoor unit. Keep the air filters clean.

Adjust the vertical and horizontal air direction to get a comfortable indoor temperature. Do not place yourself directly in front of the operating unit. Raising the fan speed can enhance the cooling efficiency. In heating operation, the humidity level of the room should be adjusted properly, or the air will be dry and uncomfortable.

6. Trouble Shooting

Before calling a repair man, please check the followings:

Symptom	Possible reason
The air conditioner does not work	• Problem with the remote control. • Problem with the voltage. Please shut the power, wait 3 minutes and restart the unit. • Verify the circuit breaker or fuse.
The unit does not blow warm air in heating mode	• The compressor is in a delay mode (to protect the compressor there are several minutes delay for every start) wait a few minutes after starting the unit. • The hot air will be blown out only after the defrosting operation.
Low efficiency of cooling or heating	• The air filters are too dirty. • The intake vent or outlet vent is blocked up. • In heating operation, the ambient temperature is too low. Defrosting operation may be required.
Noise	• Water leak noise. It is the sound of the circulation of refrigerant. • Condensed air leaking out. In heating operation, during the defrosting, it is the sound of the back-flow refrigerant.
Abnormality on the remote control screen	• Batteries need to be replaced. • Batteries are inserted incorrectly. Take the batteries out and insert them again.
Cold water leaking from the air conditioner	• Moisture will occur in the air outlet due to the tempera ture difference.

Part Ⅱ Installation Instruction

To guarantee the unit it must be installed according to the instructions in this manual.

- The air conditioner has to be grounded properly.
- Check the connecting cables and pipes carefully, make sure they are correct and firm before connecting the power of the air conditioner. The maximum length of the connecting pipe between the indoor unit and outdoor unit should be no more than 5 metres (or it will affect the efficiency) .
- After installation, the consumer must operate the air conditioner according to the instructions in this manual.

Caution: The installation must be performed in accordance with the National/ Regional Wiring Standard or Code by a qualified technician.

Caution: The indoor unit must be installed at least 2.4m(8ft) above floor or ground level.

Warning: Risk of electric shock can cause injury or death: Disconnect all remote electric power supplies before servicing. There must be an air-break switch between indoor and outdoor unit which needs to be installed close to the indoor unit.

1. Select the location for installation

1-1 Indoor unit

- Must be placed on a rigid wall with no vibrations.
- No obstacle in front of air intake and outlet vents, the distance between the top of the unit and the ceiling should be at least 10cm (4 inches).
- Place unit where the cold air can be blown evenly throughout the room.
- The maximum distance between the indoor unit and outdoor unit is 5 metres; the same distance must be respected for the height.
- Avoid direct sunlight. Exhaust water must be easily drained.
- The air filter must be installed or removed easily (there should be at least 20 cm of free space under the unit).
- The distance between the unit and a television or a radio should be more than 1 metre (because the unit can disturb the images of the television and make some noise).

- The unit has to be more than 1 metre away from a fluorescent lamp or other electric bulbs (they could interfere with the remote control).

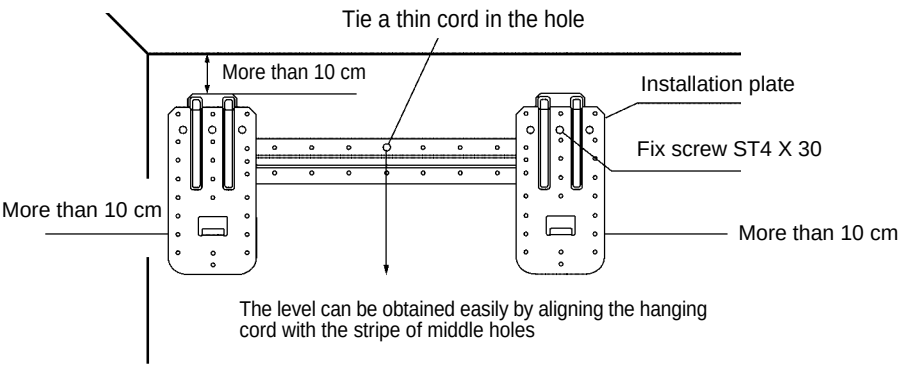
1-2 Outdoor unit

- It should be installed in a well ventilated place that is protected from strong winds.
- It should not be exposed to direct sunlight and rain.
- It should be installed where the operating noise will not disturb neighbours. It should be placed on a solid base to avoid vibrations or noise.
- Keep away from flammable gas.
- If the unit is installed on a raised base make sure it is well secured.

2. Installation of Indoor Unit

2-1Fix the wall-mounted plate

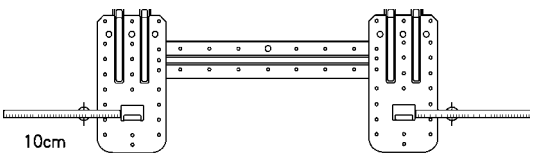
As the unit is heavy, the wall should have sufficient strength and durability for operation of the air conditioner, and for prevention of any vibration or noise. If it is weak, reinforcement work should be performed prior to installation.

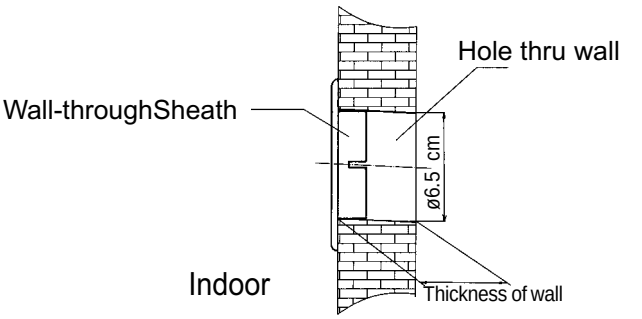

Tie a thin cord in the hole
More than 10 cm
Installation plate
Fix screw ST4 X 30
More than 10 cm
More than 10 cm
The level can be obtained easily by aligning the hanging cord with the stripe of middle holes

There should be more than 10cm of space all around while installing the indoor unit.

2-2 Drill a hole in the wall

- Select the location.
- Drill a hole of approximately 6.5 cm diameter
  Insert the wall-through sheath into the hole

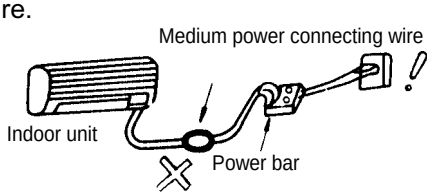




2-3 Installation of the Power Source

We recommend that you do not use an extension cord or an adapter plug with this appliance. Do not change the plug on the power cord of this appliance.

The specification of the power wires and the connecting wires should respect the relative standards, the AWG size of connection cords between indoor and outdoor unit is 16 and for the power supply cord it is 14.(the one of KFR-70GWZ/BM is 12.)The connection of the wires must be done strictly according to the diagrams and connecting marks. Only the same marks can be connected together. The location of the connecting cables between the indoor unit and outdoor unit must be out of direct sunlight exposure.



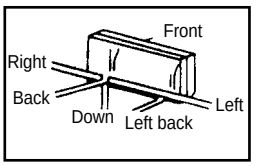
Warning:
NEVER cut a power wire open. A wrong connection could cause major incidents. Do not use a damaged supply cord, it must be replaced to avoid an electric shock.

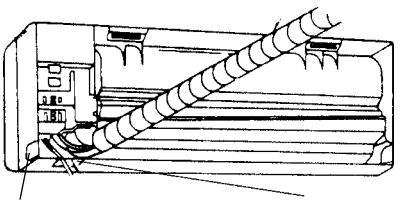
2-4 Installation of Drain Hose

- The drain hose should be put below the refrigerant pipe (copper pipe)
- Do not bend the drain hose or raise it.
- Do not wrap the drain hose too tightly.

2-5 Arrangement of Pipes

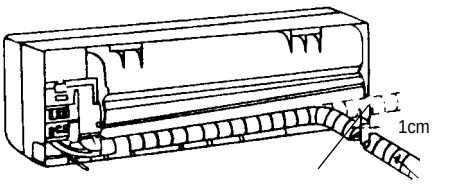
The drain hose must be put below the copper pipe. Put together the refrigerant pipe, drain hose and the connecting wire of indoor and outdoor units. Wrap them with binding belt. The pipes can be arranged towards five directions (back, right, left, down and left-back). Bind the pipes with binding belt from the place closest to the elbow (The overlap of the binding should be 1/2 of the width). Bind the pipes from 1 cm inside of the unit, if you direct the pipes from the left side.





Cut off this part when directing pipes to right side

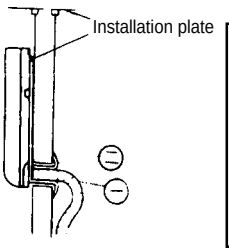
Cut off this part when directing pipes down ward

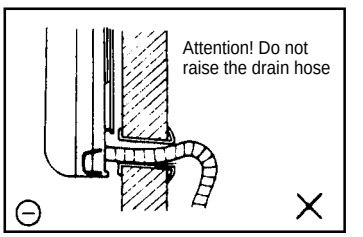


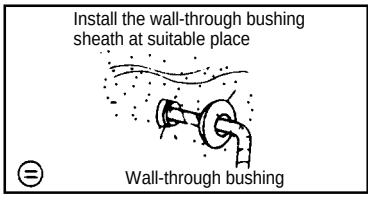
Cut off this part directing pipes toward left side

Installation of Indoor Unit

Pass the pipes through the wall, hoist the unit on the installation plate and fix the lower part with a hook.







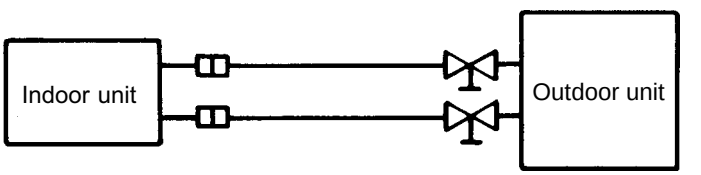
3. Installation of Outdoor Unit

The outdoor unit should be installed on a solid base. (Such as concrete) If it is installed against a brick wall, the thickness of the brick wall should be at least 10cm deep. If there is a vibration, please install the protective anti-vibration rubber spacer. Do not install the unit directly on the ground; the base has to be solid and resistant enough to support the weight of the unit. It has to be firmly fixed. The unit should not be installed on an angle greater than 5^0.

When installing the unit, be sure to leave a space of 50 cm in front, more than 10 cm behind, on top and on the left side of the unit and leave a space of 35 cm on the right side.

3-1 Flared Joint

You will have a flared joint on both units (indoor and outdoor). As indicated on the diagram, the refrigerant pipe is used to connect the indoor unit and the outdoor unit.

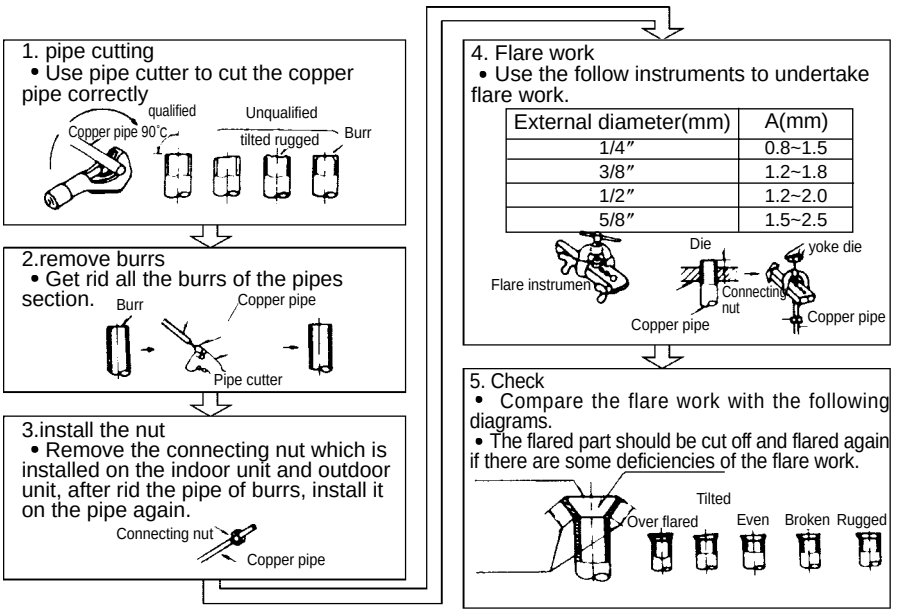


Refrigerant verification = If the length of the pipe is more than 5m, please refill the refrigerant (fleon R410A).

Pipe length	less than 5m	need not to refill refrigerant
	more than 5m	need to refill refrigerant 50g/m

3-2 Pipe Joint

One of the major causes for a gas leak is due to a defective flared joint, so please verify the quality of the installation.



1. **Connection of the indoor unit.**
   Connect the thick and thin pipes to the indoor unit.

Apply a thin coat of refrigerating oil on the pipes joints. When connecting, screw the centre and then screw the first 3-4 turns of the connecting nut by hand. Use the wring torque diagram as the standard of indoor pipe's connection, use two spanners to tighten them; over-tightening will damage the flared joint.

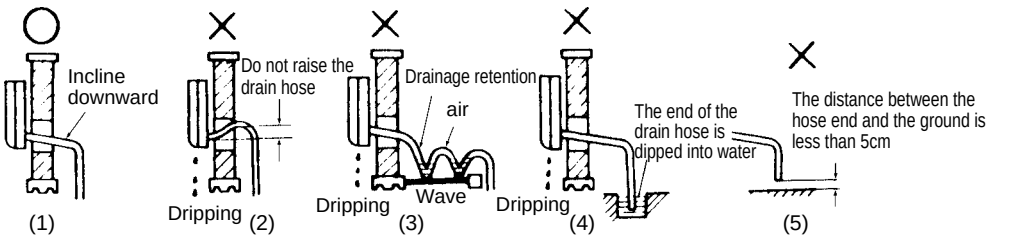
External diameter(mm)	Wring torque(kgf • cm)
1/4″	150~210
3/8″	380~450
1/2″	400~460
5/8″	500~575

2. **Connection of outdoor unit.**
   Proceed the same way as the indoor unit.
   Connect the pipes with the outdoor unit's valve. Use a spanner to grip the valve and use the torque spanner to grip the connecting nut.
   Connect the pipe to outdoor unit with the same wring torque as used for the indoor unit.

Caution: Proper insulation thickness. If the insulation is too thick, it could cause an accumulation of water behind the indoor unit. If the insulation is too thin it could cause moisture and water dripping.

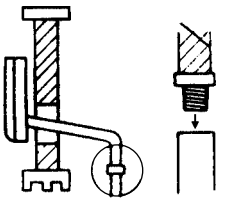
3-3 Drain Hose

To drain the water, please incline the drain hose downwards (diagram 1). Do not install as shown on diagram 2~5.

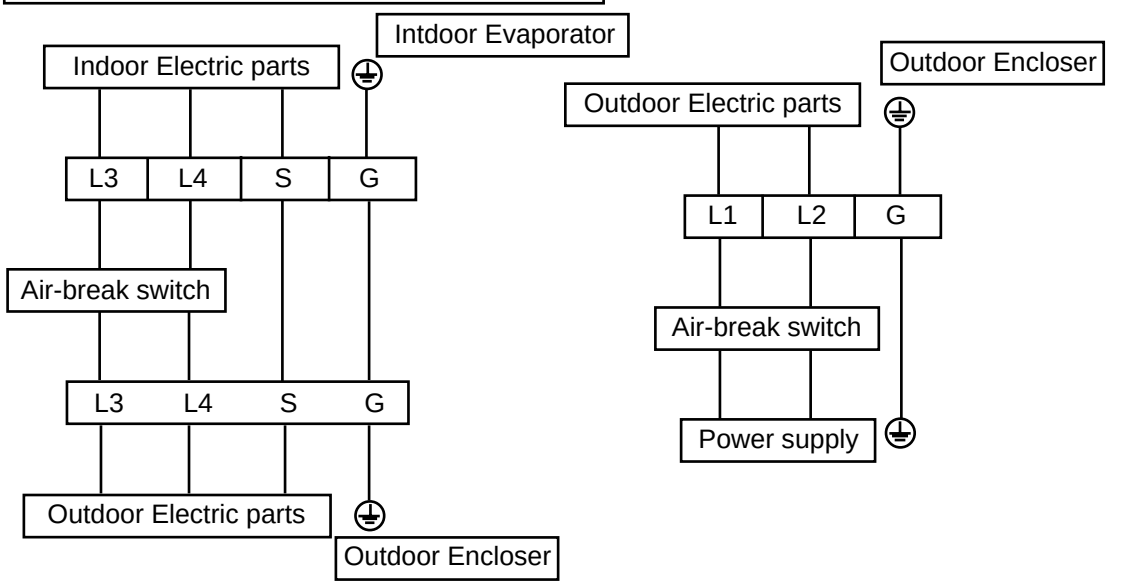


If the drain hose installed on the indoor unit is not long enough, please connect as shown on the diagram to your right.

If the drain hose needs pass through indoors, please wrap it with heat insulation materials which are available at your local hardware store.



3-4 Electric wire connection



The installation must be done as indicated on the diagram, connect the power wires according to the stipulated order and colors.

The power wires between the indoor unit and the outdoor unit must be corresponding with each other (colour, order and diameter) The yellow-green ⏚ wire is the grounding wire, it must be connected to an adequate electric power socket or it could cause an incident.

After installation, the wires must be pressed tightly with the wire clip.

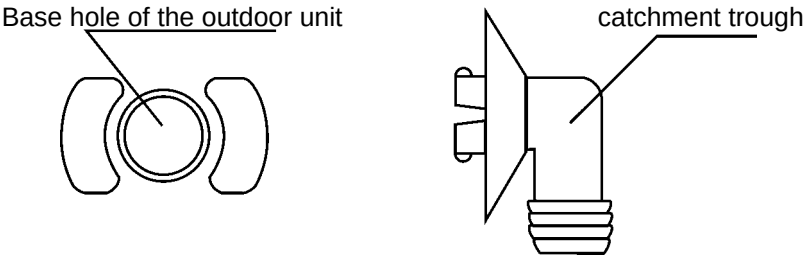
Make sure the wires are attached solidly by pulling gently.

If the connecting wires are not long enough replace them with wires of same diameter and color.

Warning: The wires must be connected properly otherwise it could cause a short circuit.

3-5 Installation of the exterior draining pipe

Insert the drainage pipe into the hole of the base, connect an extending pipe to drain the water.



4. Test Run

4-1 Pipe-cleaning and vacuum verification

Make sure all the pipe joints have been screwed tightly, then clean the pipes and verify the vacuum.
Remove the valve core copper caps of the high pressure valve and the low pressure valve.
Remove copper cap of refrigerant-adding valve, measure the vacuum with the vacuum pump (value should be less than 10Pa)
Close the copper cap of refrigerant-adding valve.
Unscrew the high pressure valve and low pressure valve.
Use the leakage detector or soapy water to check the system pipe joint and valve cap for leakage.
If there is no leakage, screw tightly the copper caps of valve cores.

4-2 Test Run Procedure

Before testing, please check all the connecting wires and pipes carefully to see if they are correctly connected, verify if the stop valve is completely opened or closed, and if the air conditioner has been grounded correctly.
Connect the air conditioner system to the power source, a “Du” sound emitted by the indoor buzzer should be heard.
Turn the air conditioner ON with the remote control.
Please choose the “heating” mode and set temperature at 25^0C to check the heating function. Please choose the “cooling” mode, set temperature at 16^0C to check the cooling function

Remark

Check the following items according to the related contents of this manual.

Indoor unit :
Is the noise abnormal?
Does every indicating lamp function normally?
Does it drain smoothly?

Outdoor unit:
Is there abnormal noise or vibration when it is running?
Does the noise and water drainage disturb the neighbours?
Is there a gas leak?

The remote control:
Do all the function keys work normally?
When transmitting the signal, does the indoor unit emit a “Du” sound?

4-3 Instructions to Consumers

After installation, the service technicians are required to:
Explain the operation methods, the key functions, and any other information included in this manual.
Explain how to remove and install the filters and how to control the wind direction.
How to place the batteries in the remote control.
Advise the consumers to read this instruction manual carefully before operation, and answer the consumers’ questions.

Main Specifications

Item \ Data \ Model		KFR-25 GWZ/BM	KFR-35 GWZ/BM	KFR-50 GWZ/BM	KFR-70 GWZ/BM
Type		Cooling & Heating			
Cooling Capacity	(Btu/h)	9000	12000	18000	24000
Heating Capacity	(Btu/h)	10400	13650	19100	27000
Rated Voltage	(V)	230～			
Rated Frequency	(Hz)	60			
Rated Cooling Power Input	(W)	765	1075	1670	2400
Rated Heating Power Input	(W)	880	1160	1720	2550
Mass:indoor unit/outdoor unit	(lbs)	24/77	24/95	35/112	37/150
Air Flow:indoor unit	(m^3/h)	450	500	800	1200
Design Pressure of High Side	(PSI)	500	500	500	500
Design Pressure of Low Side	(PSI)	250	250	250	250
Refrigerant:type/quantity	(lbs)	R410A/1.85	R410A/2.1	R410A/2.9	R410A/4.2

Note:

The above mentioned cooling and heating capacities are standard and may vary slightly in accordance with the ambient temperature.

Please use the unit for heating when the outdoor temperature ranges from –7^{0}C to 43^{0}C and for cooling when outdoor temperature ranges from 18^{0}C to 43^{0}C.

The air conditioner should be connected to its own separate circuit.

No notice will be given if there are changes in the data, please take the data on the unit's name plate as the standard.

Serial No.: eb45493

Version:090318

Shinco®